

REMARKS/ARGUMENTS

Claims 1-4, 6-13 and 16-17 remain in this application. Claims 1, 7 and 8 have been amended. Claims 5, 14 and 15 have been canceled.

Drawings

Applicants gratefully acknowledge Examiner's approval of the proposed drawings. Applicants will be happy to supply the corrected replacement drawings upon the issuance of the Notice of Allowance.

Claim Objections

Claim 8 stand objected because of the minor informality. Claim 8 has been corrected, as suggested by Examiner.

Claim Rejections

Claims 1-3, 5 and 6 stand rejected under 35 USC 102 (b) as being anticipated by Wang et al.

Claim 1-3 and 6 are directed to a glass-ceramic fiber. The Wang reference is directed to a glass ceramic glass.

Although the material disclosed in the Wang reference is suitable for short planar waveguides, this reference does not teach, suggest or imply that this material can be fiberized. Most glass ceramic materials are not suitable for fiberization. This is because the material has to be re-heated at high temperatures suitable for fiber draw and these temperatures are above liquidus. Thus, heating glass-ceramics to high temperatures effects the crystalline phase. Furthermore, the process of fiberization requires, in addition to re-draw step, a cladding step (i.e., another thermal treatment and diffusion of some core and cladding materials into one another) and an additional heat treatment.

The Wang reference does not provide solutions to any of these issues and does not enable making of optical fiber from the described glass. In fact, the author of this article understood the difficulties associated with making fiber and teaches away from the applicant's invention by suggesting to make channel waveguides, rather than fiber waveguides.

Furthermore, claim 1 has been amended to incorporate the subject matter of claim 5. (Claim 5 has been canceled.) Claim 1 now specifies that the "stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of its precursor rare earth doped glass". This feature is not shown in the Wang reference. The following are the reasons for this assertion.

The Examiner stated: "Wang et al. would necessary have stimulated emission and absorption line shapes narrower than its precursor rare earth doped glass (Fig. 5), since the dopants within the crystallites would produce less scattering and thus sharper stimulated emission and absorption lines compare to dopants outside the crystallites". However, according to Applicants, the amount of scattering has no relation to the narrowing effect during stimulated emission. This is because line narrowing of rare-earth emission and absorption lines relates to the amount of rare-earth dopants (concentration) within the crystalline environment, while scattering dopants upon size and size distribution of the crystallites and upon the refractive index difference between crystallites and the surrounding glass.

Therefore, claim 1 is not anticipated by the Wang reference. Claims 2-3 and 6 depend from claim 1 as their base claim and, therefore, are also not anticipated by the Wang reference.

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Claims 7-12 and 14-16 stand rejected under 35 USC 103(a) as being unpatentable over Borelli et al ('505) in view of Wang et al. and Ainslie et al ('650)

Claim 15 has been canceled. Claim 7 is an independent claim. It calls for an optical amplifier that includes glass-ceramic rare earth doped fiber. Claim 7 has been amended to include the language of the original claim 15 i.e., "wherein stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of its precursor rare earth doped glass". However, none of the above three references discloses this feature. Since the references, in combination, do not disclose all of the claimed features of claim 7, claim 7 is not obvious over Borelli et al ('505) in view of Wang et al. and Ainslie et al ('650).

Claims 8-12, 16 and 17 depend on claim 7 as their base claim and, therefore, expressly incorporate the language of claim 7. Therefore, claims 8-12 , 16 and 17 are not unpatentable over Borelli et al ('505) in view of Wang et al. and Ainslie et al ('650).

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Conclusion


Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Svetlana Z. Short at 607-974-0412.

DATE: 5/21/04

Respectfully submitted,


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